

The mangrove forest as a feeding ground and nursery habitat for the ichthyofauna: Mida Creek in Kenya

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Mangrove forests are among the most productive ecosystems, sustaining both terrestrial and aquatic fauna (Kathiresan, 2011). They are important to coastal fisheries by providing foraging and hiding places for commercially valuable fishes (Tomlinson, 1986; Rönnbäck 1999). This research investigated the fish assemblage of Mida Creek (Kenya, East Africa) as well as the presumed feeding and nursery functions of the area for the ichthyofauna present. This explorative study contributes to a Kenyan-Flemish project in which scientists aim to identify the impacts of human exploitation and management regimes of mangroves on biodiversity richness and abundance, including demersal fish. The species composition of the ichthyofauna of Mida and trophic interactions therein was studied for five representative sampling areas. These sites are located at various distances from local villages in order to include the effect of different degrees of human disturbance. Samples were collected during 5-6 consecutive days close to spring tide in mid July 2011. Fishes were caught using several types of passive fishing gears such as large and small fyke nets, gill nets and occasionally beach seine. Each individual was identified to species level, measured and weighed. We performed stomach content analysis to provide information about fish diet. Furthermore, stable isotope analysis was applied on most fishes in order to detect whether the source of primary production for the higher trophic levels is mangrove-related or not. A total of 29 fish species was found with a catch of 939 teleost specimens. Our analyses showed that a majority of fish belonged to the zoobenthivorous/omnivorous trophic mode, they were mainly feeding on invertebrates. Their diet was quite similar over different locations and life stages. Two species (*Sphyraena barracuda* and *Synodus variegatus*) exhibited a mixed diet with a piscivorous preference. Results concerning the population structure suggested that the fish community of Mida consisted of both transient and resident species. Juveniles were, however, numerically more abundant in the whole area than adult specimens. Based on our restricted sampling period and methodology, we were not able to accurately detect human impacts on fish stock and species composition between locations. Finally, our results confirm that Mida Creek mangrove is an important habitat for the ichthyofauna especially for juvenile fishes. Its role as feeding and nursery ground appears well established.

References

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